Extended Homework Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Week 21 Date\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_

Proofs are not going away yet!

Developing Proofs

1. From Spark Notes online, below is a summary of what a Geometry proof contains and how to write a proof.

A two-column geometric proof consists of a list of statements, and the reasons that we know those statements are true. The statements are listed in a column on the left, and the reasons for which the statements can be made are listed in the right column. Every step of the proof (that is, every conclusion that is made) is a row in the two-column proof.

Writing a proof consists of a few different steps.

1. **Draw the figure that illustrates what is to be proved. The figure may already be drawn for you, or you may have to draw it yourself.**
2. **List the given statements, and then list the conclusion to be proved. Now you have a beginning and an end to the proof.**
3. **Mark the figure according to what you can deduce about it from the information given. This is the step of the proof in which you actually find out how the proof is to be made, and whether or not you are able to prove what is asked. Congruent sides, angles, etc. should all be marked so that you can see for yourself what must be written in the proof to convince the reader that you are right in your conclusion.**
4. **Write the steps down carefully, without skipping even the simplest one. Some of the first steps are often the given statements (but not always), and the last step is the conclusion that you set out to prove. A sample proof looks like this:**

Writing steps is an easy way to break down what you need to do. In class, we just began exposing you to note taking. In the space below, I want you to write your **own notes** about the Spark Notes summary of Geometry proofs above.

2. In the figure below, triangle ABC, the plumb level is isosceles. A weight, called the plumb bob, hangs from a string attached at point C. If you place the level on a surface and the string is perpendicular to AB, then the surface you are testing is level. To tell whether the string is perpendicular to AB, check whether it passes through the midpoint of AB. Create a two-column proof to with the given information that D is the midpoint of AB and ABC is an isosceles triangle with AC congruent to BC. Prove that angle ACD is congruent to angle BCD.

C

D

B

A

3. Find a Geometry proof that relates to the real world or create your own Geometry proof that can be related to the real world.